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Energy efficient office  
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# ENERGY- EFFICIENT OFFICE EQUIPMENT

## Makes Good Business Sense



here are many options to consider

when upgrading your office equipment or buying a home computer. Add energy efficiency to your list of priorities, and the end result will be lower electricity bills, longer service intervals and a more comfortable work space. There are no drawbacks – energy-efficiency will not affect the performance of your computer, and there is no additional cost.



## Environmental UPDATE

A steady increase in computer use is the biggest factor contributing to higher energy consumption in office buildings.

Today, computers account for seven per cent of office building electricity use. If steps are not taken to improve the energy performance of office equipment, this figure will double by the year 2000.

Ironically, most of this energy is wasted. Research shows that for much of the time that our computers are on, they are not in use. Thirty to forty per cent of computers are left running at night and on weekends.

Electricity generation contributes to air pollution and climate change and has other environmental impacts. By using more energy-efficient equipment in our homes and offices, we can help reduce these environmental costs and save money.

### What Are the Benefits?

Energy-efficient office equipment reduces air pollution from power generation by reducing power consumption to 30 watts or less. Powering down also results in less wear and tear, which can extend equipment life and can mean fewer service calls or replacements.

Energy-efficient office equipment produces less heat, so your work space will be cooler and more comfortable. Because they do not get as hot, some energy-efficient computers don't need cooling fans, so they are quieter too.

### How Much Lower Will My Energy Bill Be?



Conventional System  
On 24 Hours  
Annual Electrical Cost \$165



Energy-Efficient System  
On 24 Hours  
Annual Electrical Cost \$84



Energy-Efficient System  
Off at Night  
Annual Electrical Cost \$28

*(A typical computer, monitor and laser printer, assuming consumption of 0.235 kW of electricity at a cost of \$0.08/kWh.)*

You save \$81 by choosing an energy-efficient model (enough to buy a recycled toner cartridge and a large supply of paper). Remember to switch it off when you finish using it, and your savings could jump to \$137 per year.

### Reliable Year After Year

*(Source Dataquest; 1993)*



On All the Time  
(graph shows 2 year life)



Off at Night  
(graph shows 10 year life)



Energy Efficient and Off at Night  
(graph shows 22 year life)



# Facts & FICTION

**FICTION:** Computers use large amounts of energy when starting up. It is more cost-effective to leave them running all the time.

**FACT:** A personal computer uses about one second of running-time energy when starting up. It is far more cost-effective to turn it off when you finish using it.

**FICTION:** The main reason computers are left running is to avoid electrical surges when they are turned on. Electrical surges reduce the machine's life expectancy.

**FACT:** Switching a machine off for a number of hours when it isn't needed does not make it vulnerable to electrical surges but actually extends machine life because it reduces mechanical wear. Most major computer manufacturers now insist that their machines be turned off at the end of the day.

**FICTION:** The heating and cooling cycles that result from turning computers on and off damage their boards and components.

**FACT:** Switching a machine off for a number of hours when it is not needed actually extends the machine life by reducing mechanical wear.

**FICTION:** Screen savers save energy.

**FACT:** Some screen savers are now so complex that they consume a lot of energy. Screen savers were designed for black and white or green screens to stop the menu bar from being burnt into the screen. Modern screens don't need screen savers, which are now used more for their entertainment value. In fact, the screen savers cost as much to run as a full screen of work. The best way to save energy is to turn your monitor off when it is not in use.

**FICTION:** Turning off machines causes hard drives to crash.

**FACT:** This is a fallacy dating from the days of old mainframe hard drives lubricated by soap, which would congeal if the drives were stopped. This is not a problem today because of modern lubricants. The unnecessary wear and tear that results from leaving systems on when they aren't in use is more likely to cause problems.

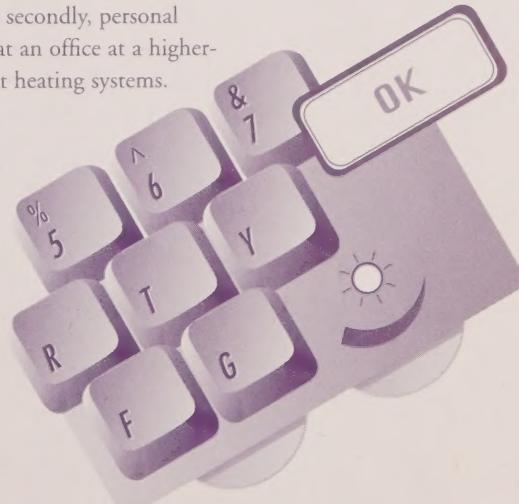
**FICTION:** Computers and other office equipment are small energy users.

**FACT:** A personal computer left on continuously consumes between \$100 and \$150 worth of electricity per year (at eight cents per kilowatt-hour). A large photocopier consumes close to \$250 for the same timeframe. Since these machines generate heat while operating, they increase air conditioning costs too.

**FICTION:** Turning off a computer at night, in the winter, will result in heat loss, which the heating system will have to make up for.

**FACT:** Firstly, if the work space is unoccupied, it may not need to be heated and secondly, personal computers heat an office at a higher-cost than most heating systems.

*(This information is printed courtesy of the New Zealand Energy Efficiency and Conservation Authority.)*



# More Ways TO SAVE

Follow these easy steps to increase your savings and make your office more energy efficient.

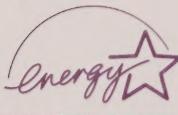
- Manage information electronically, and you'll save paper, storage space and electricity (printing can be the most energy-intensive step).
  - Be photocopier and fax smart – when you have to make copies, make them two sided, and avoid cover pages for faxes.
- Activate the energy-saver feature on all your equipment, so it goes into a sleep mode when not in use.
- Turn equipment off when it is not in use (except your fax machine). Even sleeping machines consume up to 30 watts of electricity per hour.

## How Do I Know if Equipment is Energy Efficient?

There are two North American labelling programs to help you identify energy-efficient office equipment.

EcoLogo is the mark of Environment Canada's Environmental Choice Program. The EcoLogo can be found on fax and photocopy machines and even on the supplies you will need to operate your equipment – paper, envelopes, and printer and toner cartridges.

The Energy Star Program, sponsored by the United States Environmental Protection Agency, has signed partnership agreements with leading manufacturers to promote the



development of energy-efficient equipment. These companies have introduced more than 2 000 desktop computers, monitors and printers that have earned the right to bear the Energy Star logo. The Energy Star Program was recently expanded to include photocopiers and fax machines.

## For More Information

The Internet is a good source of up-to-date information on energy-efficient office equipment. Here are just a few web sites that may help you with your research.

If you would like more information on the EcoLogo, visit <http://www.terracchoice.ca>.

If you would like a list of products that meet the criteria of the Energy Star Program, visit <http://www.epa.gov/docs/GCDOAR/EnergyStar.html>.

The New Zealand Energy Efficiency and Conservation Authority can be reached at <http://www.energewise.co.nz/office/office.html>.

You can download the *Guide to Buying and Using Energy-Efficient Office Equipment* at <http://eeb-dee.nrcan.gc.ca>, or contact

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